

Hydrography Product Information Document

Name	<i>Hydrography Vision 2014 - 2016</i>
Audience for this PID	<i>National Geospatial Program (NGP) Leadership Team</i>
Product Tagline(s)	<i>The Geospatial Solution for Surface Water</i>
Positioning Statement	<i>The National Hydrography Dataset (NHD) portrays the Nations surface water in a geospatial dataset designed for geographic information system (GIS). It is the geospatial framework for a water information system, designed to integrate all forms of water related data. This allows for advanced scientific analysis of water issues as well as general purpose mapping. The dataset consists of best available coverage for a 7.5 million mile river network and 6.5 million lakes. The dataset is free to access, continuously maintained, and ready for use. NGP will position itself to maintain and enrich the quality of NHD data through stewardship while expanding to provide new products and services that enhance our ability to serve science and our Communities Of Use (COU).</i>
Future Vision	<i>To drive new discoveries in surface water science. NGP will work increasingly to integrate NHD with high-resolution elevation data and provide the user community with new integrated products to support science. NHD will provide a geospatial framework that will allow for an increasing number of geospatial datasets to be integrated and cross referenced with surface water. The NHD will maintain current information through a mix of U.S. Geological Survey (USGS) internal expertise and stewardship. NHD will continue to promulgate data with a strong underlying structure of rich attribution that allows for linkage of scientific information, comprehensive flow modeling, and support for scientific investigation.</i>
Transformation Goals	<p><u>Hydrography As-Is:</u></p> <ul style="list-style-type: none"> • <i>Maintenance through stewardship only recently supported by the right technology and tools</i> • <i>Increased demand for higher density of streams derived from lidar</i> • <i>Need modernized delivery services and move away from dataset download</i> • <i>Solid framework foundation for integrating water data</i> <p><u>Hydrography To-Be:</u></p> <ul style="list-style-type: none"> • <i>Improved web edit tools to effectively support stewardship and continuous maintenance</i> • <i>Achieve local-resolution NHD derived from high-resolution lidar</i> • <i>Staged product delivery from the public cloud augmented with robust web services</i> • <i>Maintain the solid framework established for NHD</i> • <i>Ever increasing integration of water science information referenced with the NHD</i> • <i>Hydro-Elevation integration products and services to support science and COU needs</i>
Key features of the Target State	<ul style="list-style-type: none"> • <i>Detailed Nationwide coverage of surface water features for large-scale mapping</i> • <i>Integrated coverage with Canada and Mexico</i> • <i>Integrated with Watershed Boundary Dataset, Geographic Names Information System, National Water Information System, National Inventory of Dams</i> • <i>Strong integration with National Elevation Dataset</i> • <i>Free data access</i> • <i>Continuously maintained by the USGS and a network of stewards</i> • <i>Change management system with feature level metadata</i> • <i>Input from a consortium of Federal and State water agencies</i> • <i>A complete flow network that supports upstream/downstream analysis</i> • <i>Ability to attach other water information to the network such as water observations</i>

	<ul style="list-style-type: none"> • Extensive documentation and training
Key benefits	<ul style="list-style-type: none"> • NHD is an out of the box solution for science and mapping, ready to be used in GIS, map production systems, and web applications • Provides powerful analytic capabilities • Foundation for understanding the Nation's surface water • An example of how geospatial information can drive new growth in science
Challenges	<ul style="list-style-type: none"> • The sophistication of the dataset, and its underlying data model, requires heavy investment to render it usable by its customers • Surface water is constantly changing and requires continuous maintenance to ensure currency • User demand for the product is constantly growing with increasing expectations for quality and performance • Stewardship program has produced mixed results. It has produced huge dividends in terms of community building and advocacy for the NHD, but has produced mixed results in terms of maintaining the data on a nationally consistent, repeatable cycle. The inability to maintain NHD nationally via a state stewardship model, places it at odds with the NGP Strategic Plan vision of nationally consistent thematic coverage, maintained on a 3-year cycle
Strategy and Approach	<p>The NHD is enabled by a strong data structure, a continuous maintenance process through stewardship, linking of scientific information, a data structure that allows for flow analysis, a comprehensive inventory of water surface features, and the integration of related geospatial data. NGP's approach will be to continue to enhance and augment stewardship tools and opportunities as a means of continuously maintaining and improving the NHD. NGP will move strongly in the direction of Hydro-Elevation integration and will investigate and develop integrated products that enhance the utility of both themes. NGP will continue to work within the water community to achieve increased integration of NHD with other data sets.</p>
Product Lifecycle	<p>The Hydrography Theme has been defined within the NGP Strategic Plan as a "primary investment". The intent of this designation is to note that NGP will seek to maintain an appropriate level of core hydrography content while increasing the utility of the dataset to our COU's over- time. NHD will continue to be in a growth position through 2016 with commensurate increases in resources to accommodate expanded content and attribution richness of the data.</p>